

REMARKS/ARGUMENTS

Applicant thanks the Examiner for the thorough consideration given the present application. Claims 1-23 are pending in the present application. Claim 23 is amended. Claims 1, 5, and 11 are independent claims. The Examiner is respectfully requested to reconsider the rejections in view of the following remarks.

Claim Objection

The Examiner objected to "the light outgoing shape" recited in claim 23. Applicant has amended claim 23 to replace this phrase with "the light outgoing surface." Accordingly, withdrawal of this objection is respectfully requested.

Discussion of the Present Invention

Among the purposes of the present invention is to solve the problems described in the present specification at page 1, line 24 - page 3, line 4.

Particularly, these problems relate to conventional reflection type display devices in which the shape of the light outgoing surface of a light guiding member is dissimilar to the shape of the image display region. Such devices are controlled in such a manner to perform image formation only in the central

portion of the image display region, and to prevent light entering other portions of the image display region from being reflected toward the screen.

In these conventional devices, a problem occurs in that a portion of the image display region other than the central portion reflects light, and that reflected light is projected onto the screen. This causes part or all of the top and bottom regions of the screen's image projection region to be displayed brightly (i.e., in white), even though the top and bottom regions should be displayed in black.

Since the whitened regions appear in the vicinity of the projected image, another problem arises particularly in the use of video projectors. A video projector is generally used to view video in a dimly lit room, thereby enhancing a realistic sensation of the video. The whitened regions appearing near the projected image interferes with the viewing and reduces the realistic sensation. Also, when data projectors are being used for presentations and the like, the whitened regions lessen the effectiveness of the presentation by making it difficult for viewers to concentrate on the projected images.

In order to overcome these problems, claims 1 and 5 of the present invention recite a combination of elements in which a light outgoing surface of a light guiding member is formed in a

dissimilar shape with an image display region of a reflection type display device, and a region irradiated with light in the image display region is smaller than the image display region. Furthermore, claim 11 recites a similar feature in that a discharged light from the light outgoing surface of the light guiding member is irradiated on only a portion of the image display region of a reflection type display device.

Thus, the present invention of claims 1, 5, and 11 are useful in overcoming the above-described problems in conventional reflection type display devices by preventing a whitening phenomenon to occur in a non-display region of a projected image. Such results cannot be expected from the systems described in the Shikama, Takahashi, and Kato patents (cited by the Examiner in the rejections) because these patents merely disclose optical systems that use a projection type display device -- not a reflection type display device -- to display images.

A more detailed explanation is provided below as to the deficiencies of each of these patents in relation to the claim rejections.

Rejection Under 35 U.S.C. § 102

Claims 1, 5, 9-12, and 21-23 stand rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,634,704 to Shikama et al. (hereinafter Shikama). This rejection is respectfully traversed.

Independent claims 1, 5, and 11 recite that an image display region on a reflection type device modulates and reflects light, thereby projecting modulated light onto a screen.

In the Response to Arguments (page 9) of the outstanding Office Action, the Examiner asserts that Shikama teaches the abovementioned features, citing elements 61 and 70 of Fig. 6C and col. 11, lines 11-18.

Applicant respectfully submits that the cited portion of Shikama discloses a projection type display device 42 in which a liquid-crystal panel 61 is used to modulate light. According to Shikama, this liquid crystal panel 61 "functions as a light valve." See col. 1, lines 36-40; also see col. 3, lines 4-5. A light valve does not modulate and reflect light. Instead, light is modulated as it *passes through* a light valve.

Shikama makes this point clear. In describing the operation of the liquid crystal panel 61, Shikama teaches that "the *optical transparency* of the image display area varies in

accordance with the density and color of the picture image displayed," and that "[l]uminous flux L_{15} that *passes through* the liquid-crystal panel 61 then becomes light L_{16} that...is projected onto the screen SC" (col. 9, line 66 - col. 10, line 13; emphasis added).

Accordingly, Shikama's liquid crystal panel 61 does not have a image display region that modulates and *reflects* light, thereby projecting modulated light onto a screen, as required by independent claims 1, 5, and 11.

At least for this reason, Applicant respectfully submits that claims 1, 5, and 11 are allowable over Shikama. Furthermore, it is respectfully submitted that claims 9, 10, 12, and 21-23 are allowable at least by virtue of their dependency on claims 1, 5, and 11. Thus, reconsideration and withdrawal of this rejection is respectfully requested.

Rejection Under 35 U.S.C. § 103

Shikama/Takahashi

Claims 2-4, 6-8, 13, 14, 16, and 17 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Shikama in view of U.S. Patent No. 6,657,725 to Takahashi (hereinafter Takahashi).

Initially, Applicants maintain the argument presented in the Reply filed August 10, 2004 that the Takahashi patent is not

analogous art. However, for the sake of brevity, this argument will not be repeated here in its entirety.

Applicants further respectfully submit that Takahashi fails to fails to provide a teaching or suggestion of the claimed features discussed above in connection with independent claims 1, 5, and 11. Accordingly, it is respectfully submitted that claims 2-4, 6-8, 13, 14, 16, and 17 are allowable at least by virtue of their dependency on claims 1, 5, and 11.

Thus, the Examiner is respectfully requested to reconsider and withdraw this rejection.

Shikama/Kato

Claims 2-4, 6-8, 13-16, and 18-20 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Shikama in view of U.S. Patent No. 6,698,891 to Kato. It is respectfully submitted that Kato discloses the use of a light valve (i.e., liquid crystal display panel 6) to modulate light. Thus, it is respectfully submitted that the combination of Shikama and Kato fails to disclose the claimed reflection type display device of independent claims 1, 5, and 11.

Accordingly, Applicant respectfully submits that claims 2-4, 6-8, 13-16, and 18-20 are allowable at least by virtue of their dependency on claims 1, 5, and 11. As such,

reconsideration and withdrawal of this rejection is respectfully requested.

Conclusion

Entry of this Amendment After Final is respectfully requested, in that it does not raise any new issues requiring further search and/or consideration. Instead, the sole claim amendment addresses a matter purely related to form.

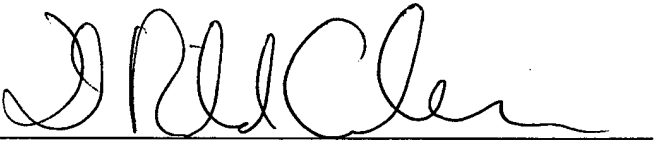
In view of the above remarks, it is respectfully submitted that all of the pending claims are in condition for allowance. Accordingly, the Examiner respectfully requested to withdraw the outstanding claim rejections and issue a Notice of Allowance in connection with the present application.

Should the Examiner believe that any outstanding matters remain in the present application, the Examiner is encouraged to contact Jason W. Rhodes (Reg. No. 47,305) at the telephone number of the undersigned in order to conduct an interview and expedite prosecution of the present application.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17; particularly, extension of time fees.

Respectfully submitted,

BIRCH, STEWART, KOLASCH & BIRCH, LLP

By 

D. Richard Anderson, #40,439


DRA/JWR/kpc

P.O. Box 747
Falls Church, VA 22040-0747
(703) 205-8000